

Do you know there is a place in Alma where you can get

Garden Furniture of all kinds
Hotbed Sash
Interior Fixtures
Interior Finish
Cupboards, Desks
Window Screens
Window Frames

Stair Work, Tables, Scroll Work, Pattern Work, Band Sawing and Turning.

F. L. BARNES JOB WORKS.

Shop in Rear of Wright House. Alma, Michigan

Have You Teeth?

THAT are causing you sleepless nights, ruining your nerves or your general health. There are a great many people suffering physical ailments due to nothing but the condition of their teeth. The teeth that have to be extracted I can remove with absolutely no pain whatever, no bad after effects, and I guarantee my plates to fit and to give perfect satisfaction. To the teeth that have to be filled, crowned or where bridgework is needed, I give my most careful attention, and use best of material, as they are also fully guaranteed.

Over fifteen years' experience has taught me how.

Yours for Good Work, **DR. WING, Dentist**



For Quick Sale

I will sell a good 35 h. p. touring car for \$200. One 1914 Ford touring car, used since June, good as new, \$350.

My 1915 Maxwell demonstrator, used since September. Have no further use for it. New cars running every month, has electric starter, and in fine condition. A bargain.

One 8-year-old horse, sound and true, wt. 1500. Come in and see the new Maxwells, they are the sensation of the year. Get in line and place your order now for spring delivery. We could not supply the demand last year after selling 38,000.

SMITH, The Maxwell Dealer

26 Arcade Bldg. Alma, Mich.

Quality Lumber Means Economy

these days because it eliminates a lot of hand labor on the part of the carpenter and enables him to do a larger day's work. Particularly is this true of our finishing lumber and flooring. By having it smoothly dressed right at the mill, where they are equipped with machines that permit of a speed of 200 lineal feet a minute the best results are obtained at the minimum cost. There are a lot of new wrinkles used these days in the manufacture of lumber, which bring the actual cost of home building down to rock bottom, and the effects gained by the use of different woods are truly wonderful. If you're thinking of building we want to show you these things.

"There's No Place Like Home."

Elwell Elevator

W. Johnson, Manager, Elwell

READ RECORD ADS

IF WOMEN ONLY KNEW.

What a Heap of Happiness it Would Bring to Alma Homes.

Hard to do housework with an aching back.

Brings you hours of misery at leisure or at work.

If women only knew the cause—that Backache pains often come from weak kidneys.

'Would save much needless woe.

Doan's Kidney Pills are weak kidneys.

Read what an Alma citizen says:

Mrs. Charles Vine, 426 E. Downie St. Alma, Mich., says: "I have great faith in Doan's Kidney Pills. They relieved me of dull backaches and pains in my loins and corrected kidney weakness. The statement I gave some years ago telling what Doan's Kidney Pills had done for me still holds good. I am confident that Doan's Kidney Pills are a fine kidney medicine."

Price 50c, at all dealers. Don't simply ask for a kidney remedy—get Doan's Kidney Pills—the same that Mrs. Vine had. Foster-Milburn Co., Props., Buffalo, N. Y.

ATLANTIC AND PACIFIC OCEANS JOINED BY BELL TELEPHONE LINE

President Vail's Engineers Make It Possible For President Wilson to Send His Voice Across the Continent Instantly.

BELL, VAIL AND WATSON, CREATORS OF TELEPHONE. EXCHANGE GREETINGS OVER 4,400-MILE CIRCUIT

Public Officials of Cities on Two Coasts Take Part in Celebration and Congratulate One Another on New Bond Established Between East and West.

New York, January 25.—The completion of the long distance telephone line between New York and San Francisco was celebrated today. First, this city had speech with her California neighbor, 3,400 miles away. Then the wires that swing southward from New York brought Washington and San Francisco into telephonic touch. On down the coast to little Jekyll Island opposite Georgia, they carried the Golden Gate's greeting. To the North, Boston, the birthplace of the telephone, talked across the continent.

At the White House President Wilson spoke into the mouthpiece of his telephone and his voice was whirled across thirteen States to the shore of the Pacific.

President Wilson Talks. President Wilson talked first to President Moore of the Panama-Pacific exposition. He said:

"It appeals to the imagination to speak across the continent. It is a thing that has been done in the past, but the first thing I have done is to send my voice from sea to sea. I congratulate you on the fine prospects for a successful exposition. I am confidently hoping to take part in it after the adjournment of Congress. May I not send my greetings to the management and to all whose work has made it possible and has made it the great event of the year, and to convey my personal congratulations to you?"

Clear as a bell came back President Moore's reply:

"We are looking forward to your coming here. I think you will be pleased with what we have done. I assure you, Mr. President, that you will never receive a welcome that will be more cordial and more enthusiastic."

President Wilson then talked to Mr. Thomas A. Watson, in San Francisco, with Dr. Alexander Graham Bell listening in on the line at New York. President Wilson said:

"This greatest of telephone lines which today has been dedicated to the service of the public, must always be distinguished because through its copper wires the voice of the Chief Magistrate of this nation has for the first time in its history been transmitted from the seat of government at Washington westward thirty-six hundred miles to the shores of the Pacific. This line, the voice of President Wilson was carried with magic speed across rivers and plains and mountains, instantly reaching San Francisco where in clear tones it spoke his message of congratulation to men of achievement."

"Unable to be present with us in person, Mr. Theodore N. Vail has nevertheless taken part in these ceremonies in a manner that fills the mind with amazement. By using his wonderful Bell system of organized men and organized wires he has talked to us across the continent from an island eleven hundred miles to the south, near the coast of Florida. From there he has spoken through the length and breadth of our land to the state of California, forty-four hundred miles away, thus attaining the longest distance ever achieved by the voice of man."

"We are filled with grateful feelings that Alexander Graham Bell and Thomas A. Watson have today talked to each other over this new, historic line. Doctor Bell was the first to conceive of the method and apparatus for transmitting speech electrically and Mr. Watson, following exactly the directions given to him by Doctor Bell, constructed with his own hands the first telephone. Bell was the first to conceive of the electric telephone and Watson was the first to build it."

"There is before us an exact reproduction of this electric speaking telephone employed by Bell and Watson when that great first talk was made. Through the instrument Doctor Bell's voice talked to Mr. Watson, but this time the distance and how great the triumph."

"I consider it an honor to be able to express my admiration for the inventive genius and scientific knowledge which has made this possible, and my pride that this vital cord should have been stretched across America as a new symbol of our unity and our enterprise. I am very glad to convey my personal congratulations to Mr. Bell. And I want to convey to you my personal congratulations. This is a memorable day, and I want to convey to you warm congratulations."

"After talking with Doctor Bell, the President was asked by Mr. Kingsbury if he cared to say a word to Theodore N. Vail, president of the American Telephone and Telegraph Company, who is staying at Jekyll Island, off the coast of Georgia. "Why, yes, certainly," answered the President. While the circuit was being arranged the President chatted with Mr. Kingsbury, several times expressing his admiration of the achievements in which he was a participant. Mr. Vail was then announced, and the President immediately placed the receiver to his ear, asking: "Is this Mr. Vail?" Mr. Vail's voice came over the wire so plainly that the President held his receiver lightly away from his ear, and then said:

"Mr. Vail, it is a great pleasure to hear your voice. I want to send you my congratulations on the consummation of this remarkable work. I am very sorry, also, to know that you are unwell. A pause ensued. The President listening to Mr. Vail's reply. The President then said: "Well, I envy you your ability to get off. Good-bye, Mr. Vail."

But on a day when long distance telephone records were smashing up the country over, it was the talk between San Francisco and Jekyll Island that had the honor of breaking every world's record for long distance transmission. President Theodore N. Vail of the American Telephone and Telegraph company is spending the winter on Jekyll Island, and when he spoke to San Francisco, his voice had to travel 1,000 miles up the Atlantic seaboard to New York before it started on its transcontinental journey. When it sounded in the receiver at San Francisco it had gone 4,400 miles in all.

Statement of Mr. Vail. Mr. Theodore N. Vail, speaking from Jekyll Island, Georgia, said:

"At the centennial exhibition at Philadelphia, the exhibit of the Bell System consisted of two telephones capable of

talking from one part of the room to another. But at once the transatlantic line was established, and the world, taking scientists as well as laymen to exhibit with wonder. Starting with these feeble instruments only, the Bell Company, by persistent study and incessant expenditure of immense sums of money, created an entire new art, inventing, developing and perfecting, making improvements in the use of the telephone transmitter, line, cable, switchboard and every other piece of apparatus, thus carrying the human voice instantly and distinctly across the continent. This telephone line is part of the Bell System of 2,000,000 miles of wire connecting 5,000,000 telephone stations located everywhere throughout the United States and giving to the American people telephone service unparalleled among the nations of the earth."

In New York was a replica of the first telephone transmitter to carry the human voice. It looked to be a crude enough affair. Tie down a drum-head over a wooden receiver, join the center of the drum-head to the free end of a receiver spring, arrange a mouthpiece over the drum-head—and there you have it.

There was further reminder of the telephone's babyhood in a cord of wire connected with the transmitter. This was part of the original wire over which Dr. Bell spoke the first words ever uttered by telephone, in his boarding house at 5 Exeter Place, Boston.

J. J. Carty Greets Dr. Bell. One of the first to greet Dr. Bell as he entered was John Joseph Carty, Chief Engineer of the American Telephone and Telegraph Company, under whose direction the transcontinental line was built. Mr. Carty said:

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and transmitter and continued the conversation.

"What wonderful progress has been made by the Bell System since then in enabling our voices to be transmitted over a circuit of 4,400 miles without the least apparent distortion or weakening."

"Their work has been superb," declared Mr. Watson, "and superb also is the discipline of the organization that watches every inch of this long circuit to safeguard those feeble vibrations."

All honor to the men who have rendered this great achievement possible," concluded Dr. Bell. "They have brought all the people of the United States within sound of one another's voices and united them into one great brotherhood."

When the telephone had grown so that it could be taken outdoors on October 9, 1876, Dr. Bell had called "ahoy" across two miles of wire, just as he was calling now across three thousand, and it was not until some time later that "hello" was used.

Mayor Mitchell of New York and Mayor Rulph of San Francisco exchanged greetings.

Statement by Mr. Bethell.

In speaking of the new transcontinental line, U. S. Bethell, senior vice-president of the American Telephone and Telegraph Company, said:

"The completion of the transcontinental line is not only an epoch-making event in scientific development, but also the opening door to better conditions, commercial and social, throughout the nation. It means the breaking down of old barriers, the facilitating of the exchange of information and ideas, the bringing of the most remote points in the country closer together than were points lying within a single state a quarter of a century ago. It broadens mutual understanding and appreciation and thus aids tremendously in the advance of civilization. This is one of the romantic and inspiring steps in the progress of the art as developed by our great and always mutually helpful organization which embraces in its ranks more than 150,000 men and women. To the organization as a whole this event will have significance that cannot be overestimated. It will exert an influence that will not end with day, but go on working for better and greater results through years to come. In some way, directly or indirectly, every efficient man and woman in the organization has contributed something to the achievement, and therefore, as a whole, the organization merits congratulation."

Greeting From Boston. The following conversation took place between Thomas D. Lockwood in Boston, and Thomas B. Doolittle in San Francisco:

MR. LOCKWOOD speaking: "Good evening, Mr. Doolittle. I send you greetings from the birthplace of the telephone. It is worth while to have given the best part of our lives to the telephone service, to realize that we have reached this notable day and are privileged to take part in it. It recalls the earlier days when by building the Boston and Lowell line, the Boston and Providence lines, and the first experimental line between Boston and New York, this last supervised by yourself, the first steps in the march of long distance telephone communication were taken."

"That seems but yesterday, so fresh it is in my memory, and yet here we are celebrating the completion of the system to the Pacific coast, the crown and culmination, and that has been made possible by the combination and exercise of constant effort in engineering and invention, and constant profit by the teaching of experience."

MR. DOOLITTLE, IN SAN FRANCISCO, speaking: "Glad to hear you, Mr. Lockwood, and to exchange greetings and congratulations. I reciprocate your expressions of satisfaction in the successful accomplishment of this great work. Speaking of and looking backward over the history of telephone progress, we can both say, as did one of ancient times, 'all of which I saw and part of which I was'."

But are you not going to invite me to dinner?"

MR. LOCKWOOD, replying: "Certainly, I am happy to invite you to dinner; but don't forget that times and conditions are changed. When in 1878 we opened the Lowell line, if you were in Lowell, you would have heard my invitation while I was giving it, and could have joined me inside of an hour, but now, and where you are, while you will hear with your own ears my invitation three hours before I give it, you cannot reach the table until four or five days later."

Colonel Higginson Talks. Col. Henry Higginson spoke to Mr. Thomas A. Watson in San Francisco and was followed by Mayor James M. Curley and Mr. Elmer J. Illies, President of the Boston Chamber of Commerce.

Mr. P. L. Spaulding, President of the New England Telephone and Telegraph Company and George E. McFarland, President of the Pacific Telephone and Telegraph Company exchanged greetings.

In New York it was 4 o'clock when Doctor Bell sent his "ahoy" across the continent, and one of the first of the guests to speak after him asked the time in San Francisco. Each one looked at his watch as the answer came back: "One o'clock." This started a flurry of figuring. Those who know sound waves and the rate they travel said that it must take four hours for a man's voice, unaided, to reach the possibility

of such titanic lungs, to travel to San Francisco through the air. On the wires it takes less than one-fiftieth of a second. Electricity was driving Dr. Bell's "ahoy" at the rate of 50,000 miles per second. Sound, unaided, limps along in comparison, making only 1,100 feet per second.

Work Taken Two Years. The work of constructing the transcontinental line took two years, but the history of the work of making the poles and wires, set and strung by the

construction crews who do their duty, runs back over the space of many years. It brings you into experimental stations and testing rooms and laboratories, and covers innumerable experiments and improvements. Every step forward in the development of telephone has been over a gigantic scrap heap. Bell's original transmitter has seventy-three descendants. Fifty-three types and styles of transmitters have been introduced since 1877. Within ten years the Bell System spent for construction and reconstruction an amount more than equal to the present book value of the entire plant.

And what is true of transmitters and receivers is even truer of all that lies between the terminals of the transcontinental line, for it is in this field that the engineers had their real problems. To fill in the gap between Denver and the Coast with wires and poles was comparatively a simple. The task they confronted was to begin at New York and working all along the line, make the multitudinous improvements necessary for a 4,400 mile talk. Transmitters, switchboards, metallic circuits, hard-drawn copper wire and loading coils all had to be attuned to the transcontinental keynote. There's a hint of the real achievement in what the engineers did with the loading coils. When the loading coil left the hands of its inventor it was as large as a keg, and the fine iron wires inside it cost a mint to make. Today the loading coil is a few inches in size, and in the New York-San Francisco line there are 13,000 miles of that wire whose cost of manufacture is comparatively low.

Big Problems Solved. For those in the Day Street offices there was striking proof that the problem of transmitting speech is not solved by any loud-speaking transmitter in the replica of Bell's invention that lay before them. They realized as they looked at that instrument crude in the light of all that has happened to transmitters since, what the engineers had accomplished to make it speak across the whole United States. They saw that it was not a question of more horse power, that the telephone

engineer could not speed up dynamos or start more engines running to get what he was after. For telephone's motive power is the feeblest thing imaginable. It is a mere breath. And the engineer must preserve and hurry to their destination practically instantaneously the thousands of minute waves made in the air by the voice with all their separate shapes and individualities preserved. In speaking of his engineers' problems, President Vail said:

"The solution was found only in the cumulative effect of improvements, great and small, in telephone, transmitter, line, cable, switchboard, and every other piece of apparatus, all planned required in the transmission of speech."

Nine Million Telephones. But proud as telephone engineers are of what they have accomplished, they will tell you that this transcontinental line is by no means the last word in the telephone's development in this country. The new line is the backbone of a network of 21,000,000 miles of wire woven around 9,000,000 telephone stations of the Bell System. The completion of this line is a mighty step forward toward that ideal of universal service preached by President Vail and his associates back in the Seventies. As they interpreted universal service, it meant that anyone anywhere could speak to anyone anywhere in this country by taking his telephone receiver off the hook. The line is still in the hands of the engineers. There is an amount of field work to be done before it is opened to the public for commercial use, but when it is opened it will mean that New York business men can talk to his San Francisco associate without leaving his desk.

The telephone in the United States has always set the pace for the rest of the world. It has "made in the U. S. A." stamped on its very soul.

Here are some figures in connection with the New York-San Francisco line for the lovers of statistics:

Length of line, 3,400 miles. Route: From San Francisco to Salt Lake City, 770 miles; from Salt Lake City to Denver, 580 miles; from Denver to Omaha, 585 miles; from Omaha to Chicago, 500 miles. At Chicago the line branches, one branch going to Pittsburgh, 545 miles, and then to New York, 390 miles from Pittsburgh. The other branch goes from Chicago to Buffalo, 462 miles, and then down to New York, 350 miles. There is a continuation of the line from Buffalo to Boston, 465 miles long. From Pittsburgh there is a continuation extending to Baltimore, 250 miles away on to Washington, 265 miles. Philadelphia is reached by a branch from the line extending from Pittsburgh to New York, connecting at Newtown Square.

The diameter of the hard-drawn copper wire of number 8 B. W. G. gauge used in the line is .145 inch. The total weight of one circuit consisting of two such wires is 1,180 tons.

There are 120,000 poles in the line.

THOMAS A. WATSON.

Who made the first telephone 40 years ago according to Doctor Bell's specifications. Mr. Watson in San Francisco talked to Doctor Bell in New York over the transcontinental circuit.

DR. ALEXANDER GRAHAM BELL.

Inventor of the Telephone, Who Talked to Thomas Watson Over the New Transcontinental Line.

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